

## THE INDIGENOUS OLD WORLD PASSIFLORAS

W. J. J. O. DE WILDE  
Rijksherbarium, Leiden

### SUMMARY

A short revision of the indigenous Old World taxa in *Passiflora* in the form of a key, the enumeration of synonyms, descriptions, and an index accounting for all names proposed for the area. Examined specimens, distributional areas, and some notes are given. In the Old World 20 indigenous species are recognized. One new subspecific combination and one new species are proposed. Flowers of two species, and leaves of all taxa are figured.

### INTRODUCTION

When monographing the genus *Adenia* and treating the *Passifloraceae* for 'Flora Malesiana' it became inevitable to look at the continental South East Asian and Australian-Pacific species of *Passiflora*; the results are given in the present paper.

A revision of the Old World species of the genus was the more important as the *Passifloraceae* of the New World, mainly consisting of *Passiflora*, were monographed by Killip (1938), whereas the compilatory treatment of the Asian representatives by Harms (1925) in the 'Natürl. Pflanzenfamilien' is outdated.

For Australia and the Pacific numerous names are extant for but three species, a conclusion also reached by Beal (1970).

For continental South East Asia the situation was unsatisfactory because of several local treatments, the complexity of some species, and the lack of sufficient material, also resulting in the acceptance of too many names.

Among the more important works on S.E. Asian *Passiflora* I would mention Gagnepain (1921, for Indo-China), Hallier f. (1922, for Malesia), Craib (1931, for Thailand), Chakravarty (1951, for India), Wu & Wang (1957, for S. China), Cusset (1967 a, for SE. Asia; 1967 b, for Indo-China), and De Wilde (1972, in Flora Malesiana, in press).

As to the distinction of infra-generic entities by recent authors: besides Killip (1938) for the American species, only Harms (1925) and to some extent Wu & Wang (1957) and Cusset (1967 a, b) have adopted such for the indigenous Old World species.

To accommodate the indigenous Old World species Harms (1925) accepted four sections, viz. 1) sect. *Decaloba* DC. with subsect. *Polyanthea* (DC.) Harms comprising most SE. Asian species and some South American species, and subsect. *Eudecaloba* comprising *P. napalensis* (= *P. geminiflora*), *P. leschenaultii*, the Australian-Pacific species and some South American species; 2) sect. *Hollrungella* Harms with *P. hollrungii*, 3) sect. *Octandranthus* Harms with *P. octandra*, and 4) sect. *Anomopanthus* Harms with *P. cochinchinensis*, a species with opposite leaves.

Wu & Wang (1957) placed all the Chinese species in sect. *Decaloba* DC. subsect. *Polyanthea* DC.

Cusset (1967 a) accepted subg. *Plectostemma* Mast. (1871) for the SE. Asian species without recognizing sections. In the flora of Cambodia, Laos, and Vietnam (Cusset, 1967 b) he accepted only sections and subsections; most indigenous SE. Asian species were placed in sect. *Decaloba* DC. subsect. *Polyanthea* DC., and Harms's sections *Octandranthus* and *Anomopanthus* were retained as two other subsections of sect. *Decaloba*.

In my opinion all indigenous Old World species belong to one single section *Decaloba* DC. in the sense of Harms (1925). These species, however, do not fit in that section as conceived for the American species by Killip (1938). Unfortunately, this problem will remain unsolved until the genus is studied as a whole.

The Old World species can be divided into three groups of doubtless coherent species, as indicated in the key.

Group I contains all SE. Asian species, and largely coincides with Harms's sect. *Decaloba* DC. subsect. *Polyanthea* (DC., 1828) Harms. However, this group includes without doubt also the species *P. leschenaultii*, *P. napalensis* (= *P. geminiflora*), *P. octandra* (= *P. siamica*), and *P. cochinchinensis* (= *P. moluccana*), and hence includes Harms's sect. *Octandranthus* & *Anomopanthus*.

As shown in the key *P. siamica*, *P. perakensis*, and *P. tonkinensis* are, besides by the presence of 5—8 stamens, also distinguished by the styles being erect from the base (fig. 6 b), versus style bases more or less reflexed in anthesis (fig. 6 a) in the other species. These characters appear to me, however, not sufficient to recognize a separate section *Octandranthus* for these three species.

Group II consists of the Australian species. It was formerly known under the generic name *Disemma* Labill., and listed by Harms (1925) in sect. *Decaloba* DC. subsect. *Eudecaloba*.

Group III consists of the deviating endemic New Guinean *P. hollrungii*. This species, which is rather related to the Australian species, was placed by Harms in a separate section *Hollrungeiella*.

To discriminate between the introduced species and the indigenous SE. Asian, Malesian, and Australian-Pacific species I refer to my forthcoming treatment of the *Passifloraceae* in 'Flora Malesiana', where a key is given.

It appears — at least after some experience — that the features of the leaves (shape, position of petiolar glands, etc.) are quite characteristic for the species. Therefore, as an addition to the key, a leaf of each taxon is depicted in figs. 1—3.

In the key and the descriptions is discriminated between pedicel and stipe; with pedicel is meant the part of the flower stalk below the articulation, with stipe the part above the articulation.

Under each species an enumeration of the material examined is given. The maps are exclusively based on these specimens. A few localities in China and Indo-China could not or only approximately be located.

An account of all the specimens examined from the Old World will be given in a stencilled 'Identification List' published by Flora Malesiana Foundation, Leyden.

#### ACKNOWLEDGEMENT

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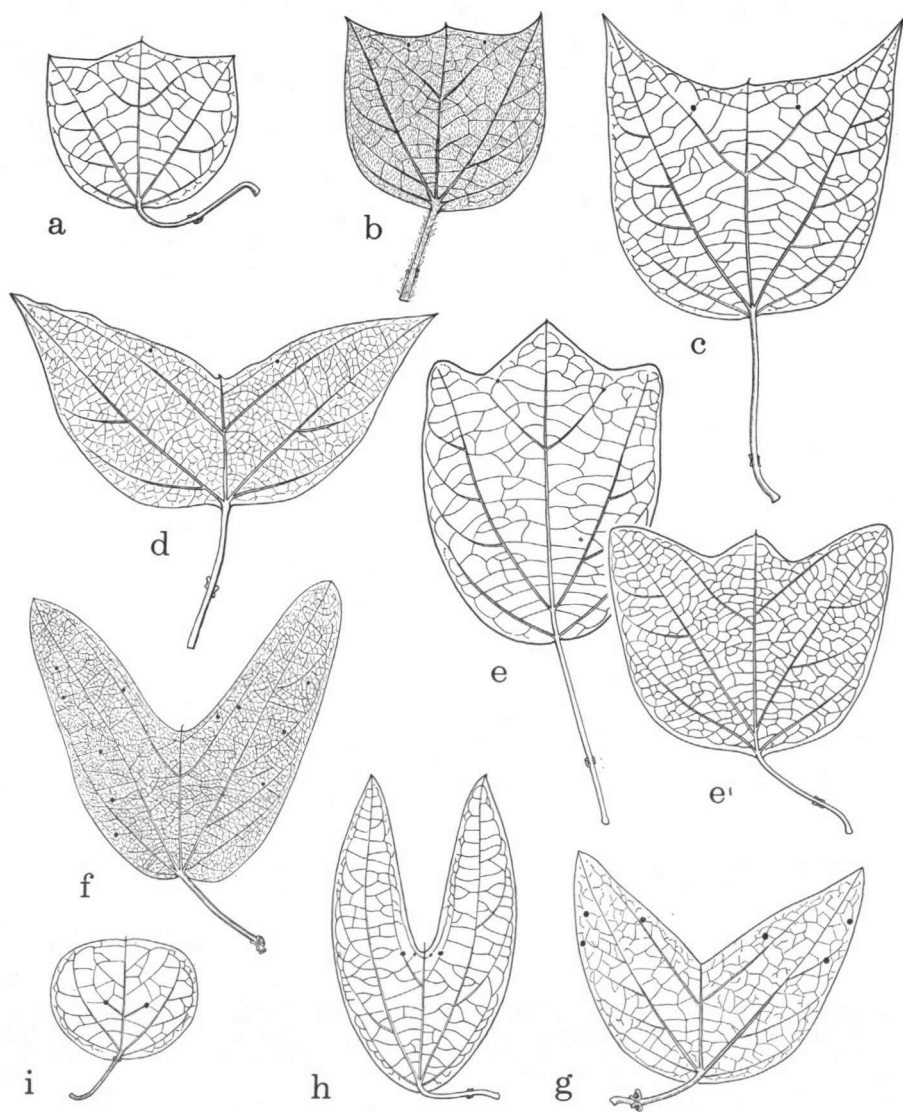
## PASSIFLORA

L., *Sp. Pl.* I (1753) 955.—*Murucuia* (*Murucuia*) Tourn. ex Medik., *Malvenfam.* (1787) 97.—*Anthactinia* Bory de St. Vincent, *Ann. Gén. Sc. Phys.* 2 (1819) 139.—*Passiflora* sect. *Decaloba* DC., *Mém. Soc. Phys. Genève* I, 2 (1822) 435.—*Disemma* Labill., *Sert. Austr. Caled.* (1824) 78, t. 79.—*Blephistelma* Rafin., *Fl. Tellur.* 4 (1836) 103.—*Decaloba* (DC., *pro sect.*) Roem., *Syn. Mon.*, 2 *Pepon.* I (1846) 131, 152.—*Distemma* Lemaire, *Hort. van Houtte*, fasc. 2 (1847) t. 11.

## KEY TO THE SPECIES\*)

1. Inflorescences sessile, or shortly peduncled, (1—)2—30-flowered. Flowers 1—4½ cm Ø, sepals 5—20 mm. Tepals (creamy-)white. Outer corona consisting of threads in 1 or 2 rows. . . . . GROUP I
2. Leaves lobed or truncate at the top.
  3. Flowers 2½—4½ cm Ø. Anthers 2—5½ mm. Pedicels 5—30 mm.
    4. Flowers (solitary or) 2 together, 3½—4½ cm Ø. Petiolar glands at or above the middle of the petiole. Corona threads in 2 rows, the outer ones longer than half the length of the sepals, 10—12 mm. Anthers 5—5½ mm. Filaments free. . . . . 1. *P. leschenaultii*
    4. Flowers mostly more than 2 together, 2½—4½ cm Ø. Petiolar glands at or usually below the middle of the petiole.
      5. Plant, except flowers, conspicuously pubescent. Flowers large, 3½—4½(—5) cm Ø. Corona threads in 1 row, up to half the length of the sepals. Anthers c. 4½ mm. Filaments connate for 1½—3 mm, partly enveloping the ovary. . . . . 2. *P. jugorum*
      5. Plant glabrous or glabrescent (in 1 specimen from Thailand shortly pubescent). Flowers 2½—3½ cm Ø. Corona threads in 1 or 2 rows, the inner threads shortest. Filaments free or ± connate.
        6. (Outer) corona threads about half as long as the sepals, or shorter, 4—6 mm. Filaments ± free. Anthers 2—4 mm. Styles 3—5 mm. Pedicels 5—15 mm. Leaf lobes acute-acuminate. A polymorphous species. . . . . 3. *P. wilsonii*
        6. (Outer) corona threads more than half as long as the sepals, 7—10 mm. Anthers 4—5 mm. Leaf lobes obtuse or acute.
          7. Pedicels 15—30 mm. Filaments connate for 1—1½ mm. Anthers c. 5 mm. Styles c. 5 mm. . . . . 4. *P. perpera*
          7. Pedicels 5—15 mm. Filaments free to the androgynophore. Anthers c. 4 mm. Styles 6—7 mm. . . . . 5. *P. sumatrana*

\*) Two introduced species are naturalized and behave as weeds: *P. suberosa* L. is recognized by the small apetalous flowers, *P. foetida* L. by the large, much dissected involucre bracts. *P. pertriloba* Merr., described from Ha-Dong, North Vietnam (type *Pételot 2482*, in A; a drawing of the leaf published by Cusset, 1967b) appeared to be synonymous with *P. suberosa* L.



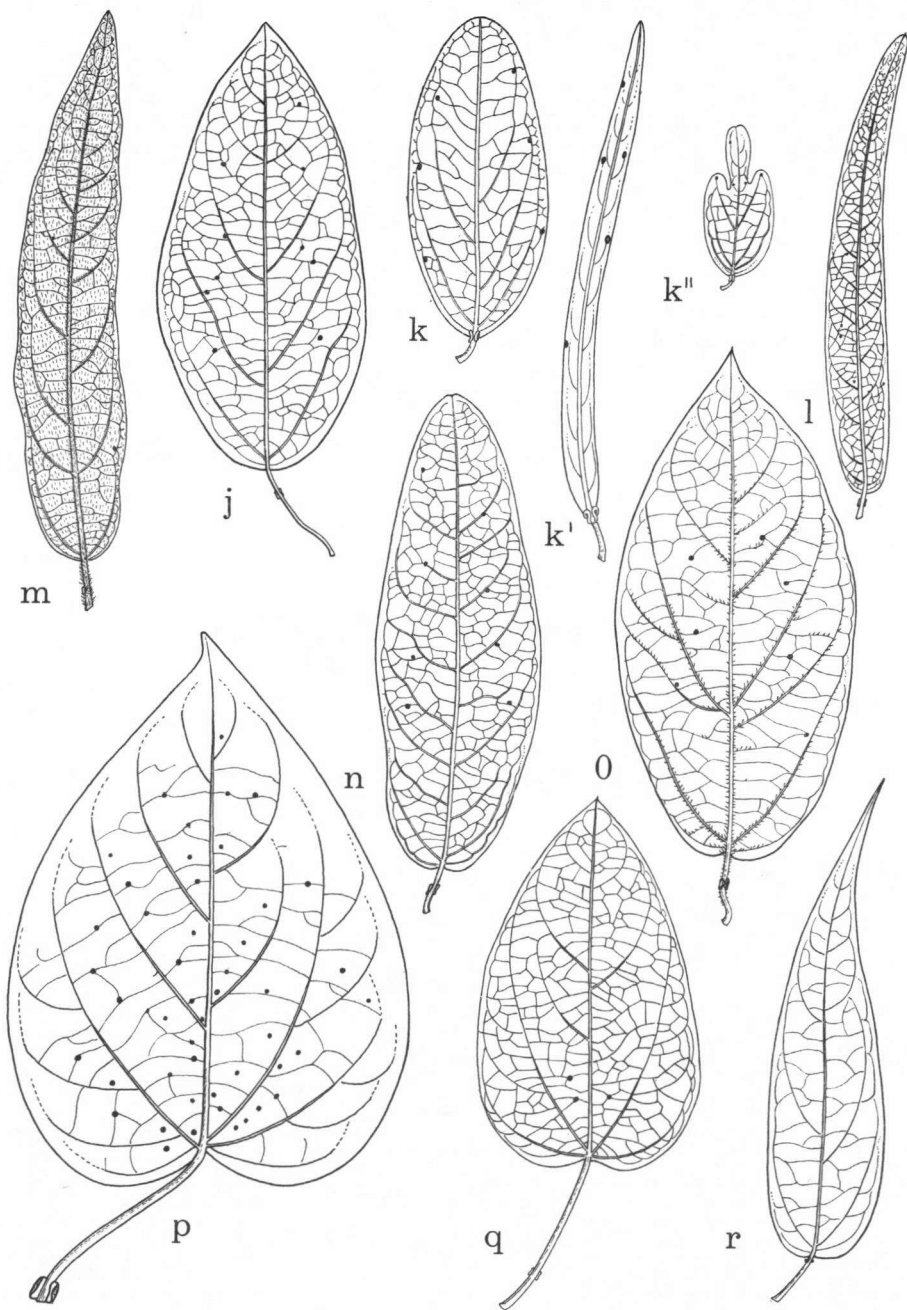
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Fig. 1. Leaves of various truncate-leaved *Passifloras* of Group I; all  $\times \frac{1}{2}$ . — a: *P. leschenaultii* (Wight 1153); b: *P. jugorum* (Forrest 12330); c: *P. wilsonii* (Henry 11791, type); d: *P. perpera* (Masters 179); e: *P. sumatrana* (Korihals s.n., syntype); e': cf. *P. sumatrana* (Vidal 797, Vietnam); f: *P. cupiformis* (Forrest 13068); g: *P. popilio* (Ching 6570); h: *P. altilobata* (Rock 2851); i: *P. henryi* (Henry 10252, type).

3. Flowers 1—2 cm Ø. Anthers c. 2(—3) mm. Pedicels 2—2.5 mm.
  8. Petiolar glands not at the apex of the petiole close to the blade. Leaves mostly deeply 2-lobed. Corona threads in 2 rows, the inner threads shortest, stem not angular. Pedicels 2—10 mm.
  9. Plant, incl. pedicels and flowers, minutely c. 0.1 mm brown hairy. Flowers ± fascicled, (1—)5—20 together, 1—2 cm Ø. Pedicels 2—5 mm.
  10. Flowers 1½—2 cm Ø. Petiolar glands saucer-shaped, sessile. Blade glands c. ½—1 mm Ø. Blade with obtuse lobes, rarely subentire; blade tip mucronate, base ± cordate, up to 1 mm peltate. . . . . 6. *P. cupiformis*
  10. Flowers c. 1 cm Ø. Petiolar glands conspicuous, on two auricle-like appendages. Blade glands 1½—2½ mm Ø. Blade with acute lobes; blade tip with minute subapical mucro, base rounded, c. 2 mm peltate. . . . . 7. *P. papilio*
  9. Plant, incl. pedicels and flowers, ½—1 mm whitish to pale brown hairy. Flowers 1—6 together, ¾—1 cm Ø. Pedicels 5—10 mm. . . . . 8. *P. altebilobata*
  8. Petiolar glands at apex of petiole. Blade ± rounded, broadly obtuse-truncate. Corona threads in 1 row. Stem ± angular. Pedicels 10—25 mm. . . . . 9. *P. henryi*
2. Leaves entire, not truncate or lobed.
  11. Flowers 2—4(—5) cm Ø.
    12. Filaments free. Style-bases curved outward. A polymorphous species. 10. *P. moluccana*
    13. Petiolar glands in upper ½ of petiole. Leaves mostly pubescent beneath.
      14. Petiolar glands (2—)3—8 mm from the blade. Leaves rather herbaceous, velutinous to (sub-)glabrous beneath. Ovary (sub-)glabrous, rarely pubescent. Fruit subglabrous. 10a. var. *moluccana*
      14. Petiolar glands at apex of petiole, 0—3 mm from the blade. Leaves mostly coriaceous, mostly velutinous beneath; on the continent and in Hainan leaves mostly (sub-)opposite. Ovary (mostly) densely pubescent. Fruit thinly hairy. 10b. var. *teysmanniana*
    13. Petiolar glands halfway the petiole. Leaves glabrous at both surfaces. 10c. var. *glaberrima*
  12. Filaments partially connate into a tube largely or wholly enveloping the ovary. Styles erect from the base. Petiolar glands mostly ± halfway the petiole.
  15. Stamens 5—8. Styles 3—5. Leaves mostly oblong-lanceolate, pubescent-hispidulous, also above, or glabrous. Androgynophore relatively short, 3—5 mm. Mostly 1 or 2 fruits per inflorescence.
  16. Plant ± pubescent-hispidulous. Leaf top mostly acute. Flowers c. 2½ cm Ø. Stamens 5—8. Styles 3—5. A variable species. . . . . 11. *P. siamica*
  16. Plant glabrous. Leaf top obtuse. Flowers c. 3½—4 cm Ø. Stamens 7. Styles 3—4. 12. *P. tonkinensis*
  15. Stamens 5. Styles 3. Leaves ovate-oblong, nearly glabrous. Androgynophore relatively long, 5—6 mm. Mostly several fruits per inflorescence. . . . . 13. *P. perakensis*
11. Flowers c. 1½ cm Ø.
  17. Sepals horned. Stem pubescent. Blade glands numerous. . . . . 14. *P. eberhardtii*
  17. Sepals not horned. Stem glabrous. Blade glands few or absent.
    18. Petiolar glands (at or) below the middle of the petiole. Blade glands conspicuous, rather approximate to the nerve bases. . . . . 15. *P. geminiflora*
    18. Petiolar glands (at or) above the middle of the petiole. No blade glands approximate to nerve bases. . . . . 16. *P. kwangtungensis*
1. Inflorescences sessile, 1- or 2-flowered. Flowers 5—10 cm Ø, sepals (20—)25—50 mm. Tepals pink to (orange) red, or bluish. Outer corona either consisting of 1 row of threads, or tubiform.
  19. Outer corona filamentous; inner corona (operculum) tubiform, 5—15(—20) mm, reddish or whitish. Tepals pink to orange or red.

## GROUP II

20. Blade base or petiole with glands.
  21. Plant pubescent, rarely glabrescent. Glands raised. Leaf lobes acute. Corona threads whitish; inner corona distinctly plicate with shallowly lobulate-crenulate edge. 17. *P. herbertiana*
  21. Plant glabrous. Glands sessile, flat. Leaf lobes acute, rounded, or emarginate. Corona threads purplish red; inner corona ± wrinkled in the upper half, with shallowly lobulate-undulate edge. . . . . 18. *P. aurantia*
  22. Glands in the upper half of the petiole. Laminal glands not or not only approximate to the nerve bases. . . . . 18a. var. *aurantia*



22. Glands in the lower  $\frac{1}{4}$  of the petiole. Laminal glands rather approximate to the nerve bases. . . . . 18b. var. *samoensis*
20. Blade base or petiole without glands.
23. Gynophore (part above androgynophore) short, 1—3 mm. Outer corona threads purplish-red, about as long as or shorter than the reddish inner corona which has a shallowly lobed edge. . . . . 18. *P. aurantia*
24. Plant glabrous. . . . . 18a. var. *aurantia*
24. Plant (incl. ovary) finely pubescent. . . . . 18c. var. *pubescens*
23. Gynophore rather long, 5—7 mm. Outer corona threads whitish, longer than the whitish inner corona which has a densely fine-fimbriate edge . . . . . 19. *P. cinnabarina*
19. Outer corona broadly tubiform, 20—30 mm, purple-blue; inner corona small, incised, 1—2 mm. Tepals bluish.

## GROUP III

20. *P. hollrungii*

1. *Passiflora leschenaultii* DC., Prod. 3 (1828) 326.—*Decaloba leschenaultii* Roem., Syn. Mon., 2 Pepon. (1846) 160.—Fig. 1 a; 4.

Climber to c. 5 m, stem slightly angular, glabrescent. *Leaves* thinly pubescent, truncate-tricuspidate to faintly 3-lobed, 1 mm mucronate, base broadly rounded, 3—7 by  $4\frac{1}{2}$ —9 cm, with 0 or 1 (or 2) glands near the top on the lower surface; lobes up to  $\frac{1}{2}$  cm, acute. Petiole  $1\frac{1}{2}$ —5 cm, with 2 glands at about halfway or slightly higher up. *Inflorescences* sessile, (1- or) 2-flowered, glabrescent. Pedicels 15—50 mm. *Flowers* whitish,  $3\frac{1}{2}$ — $4\frac{1}{2}$  cm diam.; stipe 4—7 mm. Hypanthium 8—10 mm wide. Sepals 15—17 mm, not horned, glabrous. Petals 12—15 mm. Outer corona threads 10—12 mm, inner threads c. 2 mm. Inner corona plicate, c. 2 mm high. Disk c.  $\frac{1}{2}$  mm high. Androgynophore 5—8 mm. Stamens 5; filaments 7—8 mm, free; anthers c. 5—6 by  $1\frac{1}{2}$ —2 mm. Ovary sessile, ellipsoid, 4—5 by 2— $2\frac{1}{2}$  mm, glabrous; styles 3, free, patent to  $\pm$  upward curved, 6—7 mm long. *Fruit* ellipsoid, c.  $3\frac{1}{2}$ —4 by  $2\frac{1}{2}$  cm, glabrous.

INDIA. Madras Prov., Nilgiri Hills: Anon. s.n. (A); Hb. Ball s.n. (Comm. Gough) (E); Blechhorn s.n. (E); Brandis s.n. (HBG); Cosson 1116 (P); Delessert s.n. (L); Hb. E. Drake 1116 (Hohenacker) (A, FI, L, P, W); Thomson (Hb. Hook.) s.n. (FI, L, P, W); Hügel 3302 (W), 4554 (W); Kurz s.n. (Hb. Drake) (P); Leschenault 113 (P, type); Meebold 12007 (S); Perrotet 797 (P, W); Pierre 3019 (P); Saulières 881 (A); Schmid 321 (B); Watt s.n. (E); Hb. Wight 1153 (A, C, FI, HBG, M, P, S, W) — Palni Hills: Bembower 282 (MICH); Koelz 11216 (US).

*Ecology.* 500—2300 m.

*Note.* The distributional area of this species lies rather isolated in the southern Deccan Peninsula. Its closest taxonomic affinity is with *P. jugorum*, *P. wilsonii*, and *P. perpera* from the eastern Himalayas.

2. *Passiflora jugorum* W. W. Smith, Notes Bot. Gard. Edinburgh 9 (1916) 115.—Fig. 1 b; 4.

*P. burmanica* Chakravarty, Bull. Bot. Soc. Beng. 3, 1, 1949 (1951) 49.

Climber to c. 8 m, stem pubescent, not angular. *Leaves* thinly pubescent, truncate,  $\pm$  tricuspidate or slightly 2-lobed, base broadly rounded to subcordate, 3—12 by 3— $12\frac{1}{2}$  cm,

Fig. 2. Leaves of various entire-leaved *Passifloras* of Group I; all  $\times \frac{1}{2}$  — j: *P. moluccana* var. *moluccana* (Reinwardt 1234, type); k—k': *P. moluccana* var. *teysmanniana* (k, k' from Liang 65380; k'' from Eberhardt 3178, a specimen with exceptionally some lobed leaves); l: *P. moluccana* var. *glaberrima* (Pételot 7795); m: *P. slamica* (van Beusekom & Phengkhlai 1083); n: *P. tonkinensis* (Pételot 2203, type); o: *P. perakensis* (Rahmat si Toroes 51); p: *P. eberhardtii* (Eberhardt 4705, type); q: *P. geminiflora* (Haines 897); r: *P. kwangtungensis* (Tsang 27737).

with 2—4 small glands near the top on the lower surface, midrib ending in a mucro *c.* 1 mm; lobes up to  $\frac{1}{2}$  cm, acute-acuminate. Petiole  $1\frac{1}{2}$ — $5\frac{1}{2}$  cm, with 2 glands at about  $\frac{1}{3}$ — $\frac{2}{3}$  from the base. *Inflorescences* (sub)sessile, 5—15-flowered, grey or brownish pubescent. Pedicels 10—35 mm. *Flowers* whitish,  $3\frac{1}{2}$ — $4\frac{1}{2}$ (—5) cm diam., stipe 8—13 mm. Hypanthium 9—12 mm wide. Sepals 11—20 mm, not horned, glabrous, tinged purplish outside. Petals 10—18 mm. Corona threads in 1 row, 6—8(—10) mm. Inner corona plicate,  $2\frac{1}{2}$ —3 mm high. Disk *c.*  $\frac{1}{2}$  mm high. Androgynophore 7—10 mm. Stamens 5; filaments 6—10 mm,  $1\frac{1}{2}$ —3(—4) mm connate at base; anthers  $3\frac{1}{2}$ —5 by 2—3 mm. Ovary ellipsoid, sessile,  $3\frac{1}{2}$ — $4\frac{1}{2}$  by 2 mm, glabrous. Styles 3(—4), free, patent or curved upward, *c.* (4—)5 mm long. *Fruit* subglobose to ellipsoid,  $3\frac{1}{2}$ — $4\frac{1}{2}$  by 3— $3\frac{1}{2}$  cm, glabrous.

CHINA. Yunnan Prov.: Forrest 8020 (E), 8430 (E), 11941 (E), 12330 (E, type *P. jugorum*), 21145 (E, US), 24011 (E), 26619 (A, E), 29495 (E), Tsai 55678 (A, BO), 56378 (A).

BURMA. North, Kachin State: Kingdon-Ward 22089 (BM, E) — Bhamo Dist.: Lace 5740 (E; K, type *P. burmanica*, *n.v.*).

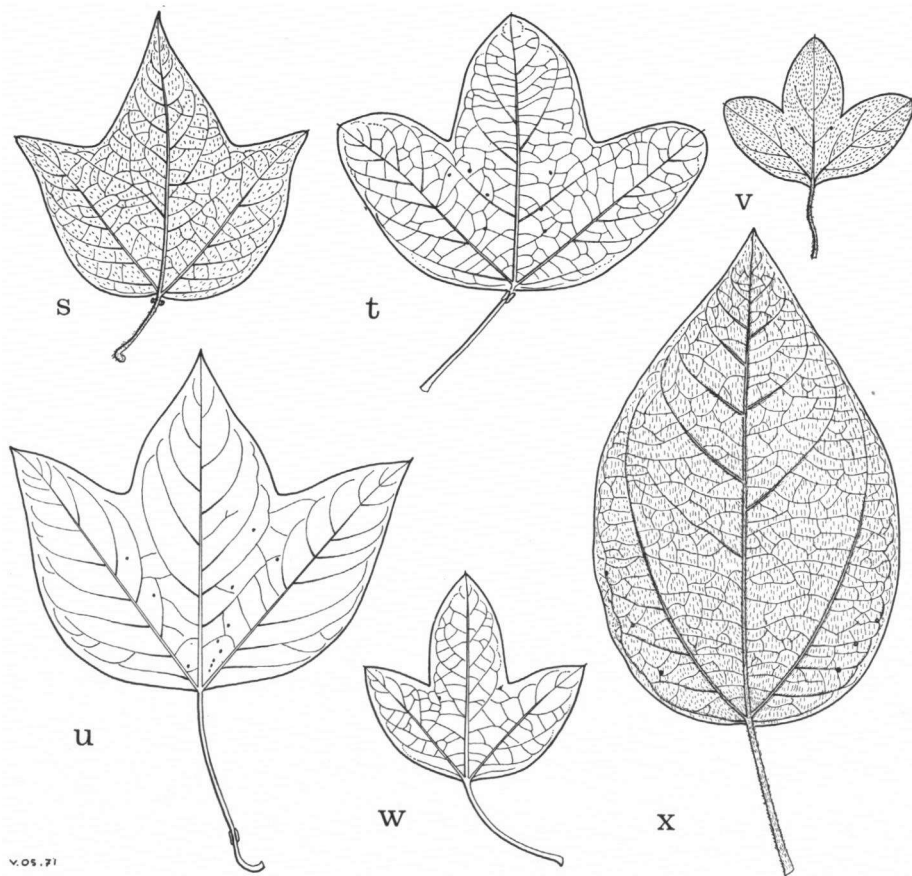


Fig. 3. Leaves of the *Passiflora* species of Group II (s—w) and Group III (x); all  $\times \frac{1}{2}$  — s: *P. herbertiana* (Anon., Sept. 1843); t: *P. aurantia* var. *aurantia* (Brass 27591); u: *P. aurantia* var. *samoënsis* (Rechinger 645); v: *P. aurantia* var. *pubescens* (Hartmann s.n.); w: *P. cinnabarina* (Rowe s.n.); x: *P. hollrungii* (Sayers NGF 21268).



## Ecology. 1750—2700 m.

3. *Passiflora wilsonii* Hemsl., Kew Bull. (1908) 17.—Fig. 1 c; 4.

*P. celata* Cusset, Fl. Camb., Laos, Vietnam 5 (1967) 122, Pl. IV.

*P. spirei* Cusset, Fl. Camb., Laos, Vietnam 5 (1967) 130, Pl. II f. 8, Pl. III f. 4.

*P. yunnannensis* Franchet, *nom.*, *p.p.*; see Cusset, Fl. Camb., Laos, Vietnam 5 (1967) 122; *Adansonia* 2, 7 (1967) 375.

Climber to c. 6 m, stem glabrous or rarely thinly pubescent, not angular. *Leaves* mostly glabrous, truncate-tricuspidate or faintly 2 (or 3)-lobed, base broadly rounded to subcordate, 4—11 by  $3\frac{1}{2}$ —13 cm, with up to 4 glands in the upper part on the lower surface, midrib ending in a mucro c. 1 mm; lobes up to  $1\frac{1}{2}$  cm, acute(-acuminate). Petiole 2—6 $\frac{1}{2}$  cm, with 2 glands at  $\frac{1}{2}$  from the base to slightly below the middle. *Inflorescences* (sub)sessile, 2—25-flowered, glabrous or rarely thinly pubescent. Pedicels 5—15(—30) mm. *Flowers* whitish, 2—2 $\frac{1}{2}$ (—3) cm diam., stipe 7—11 mm. Hypanthium 5—10 mm wide. Sepals 7—11 mm, not horned, glabrous. Petals 7—10 mm. Corona threads in 1 row, (2 $\frac{1}{2}$ —)3—6 mm. Inner corona plicate, 2—3 mm high. Disk  $\frac{1}{3}$ — $\frac{1}{2}$  mm high. Androgynophore 6—10 mm. Stamens 5; filaments 4—6 mm, free; anthers 2—3(—4) by 1—1 $\frac{1}{2}$ (—2) mm. Ovary ellipsoid, sessile, 2—3 by 1 $\frac{1}{2}$ —2 $\frac{1}{2}$  mm, glabrous. Styles 3, free, curved upward, 3—5 mm long. *Fruit* subglobose, c. 2 $\frac{1}{2}$  cm diam., glabrous.

CHINA. Yunnan Prov.: Henry 9820 (NY); 11791 (A; K, type *P. wilsonii*, *n.v.*; NY); Prince H d'Orléans *s.n.* (P); Tsai 62119 (A); Yü 16901 (A, E); Wang 72609 (A).

BURMA. Shan States: MacGregor 1287 (E).

THAILAND. Ayuthia: Kerr 9946 (E).

LAOS. Prov. de Thakhek: Spire 441 (P, type *P. spirei*).

VIETNAM. Tonkin: Pételot 1788 (NY, P, US), 5678 (P, type *P. celata*); Poilane 12596 (P), 25423 (P) — Annam: Clemens 4297 (NY, P, US); Poilane 29002 (P).

## Ecology. 1200—2500 m.

Note. The specimen Kerr 9946 from Thailand deviates by its pubescence. All other specimens are glabrous or glabrescent.

4. *Passiflora perpera* Mast. in Hook. f., Ic. Pl. 18 (1888) sub t. 1768.—Fig. 1 d; 4.

*P. obscura* Griffith ex Mast. in Hook. f., Ic. Pl. 18 (1888) sub t. 1768, *nom.*, *non* Lindl., 1830, *nec* G. Don, 1834.

*P. assamica* Chakravarty, Bull. Bot. Soc. Beng. 3, 1949 (1951) 48.

Climber to c. 6 m, stem glabrous or glabrescent, not angular. *Leaves* glabrescent, broad truncate-tricuspidate or 2-lobed, base broadly rounded to subcordate, 3—9 by 5—15 cm, with 2 glands in the upper part on the lower surface, midrib ending in a mucro c. 1 mm; lobes up to 8 cm, acute-acuminate. Petioles 1—6 cm, with 2 glands at  $\frac{1}{3}$ — $\frac{1}{2}$  from the base. *Inflorescences* (sub)sessile, 6—12-flowered, glabrescent. Pedicels 15—35 mm. *Flowers* whitish, 2 $\frac{1}{2}$ —3 cm diam., stipe 7—9 mm. Hypanthium 6—9 mm wide. Sepals 9—13 mm, not horned, glabrous. Petals 9—11 mm. Corona threads in 1(—2) row(s), (3—)7—10 mm. Inner corona plicate, c. 2 $\frac{1}{2}$  mm high. Disk c.  $\frac{1}{3}$  mm high. Androgynophore 7—9 mm. Stamens 5; filaments 6—8 mm, c. 1—1 $\frac{1}{2}$  mm connate at base; anthers 4 $\frac{1}{2}$ —5 by 2 mm. Ovary subsessile, ellipsoid, 2 $\frac{1}{2}$ —3 by 1 $\frac{1}{2}$ —2 mm, glabrous. Styles 3, curved upward, c. 5 mm long. *Fruit* subglobose, c. 4 $\frac{1}{2}$  cm diam., glabrous.

INDIA. Assam, Khasia Hills: Masters (179) (A-GH, E; K, type *P. assamica*, *n.v.*; L, M) — Naga Hills: Koelz 25368 (L) — Manipur: Watt 7310 (E; K, syntype *P. perpera*, *n.v.*).

BURMA. Kachin State: Kingdon Ward 20485 (A, E).

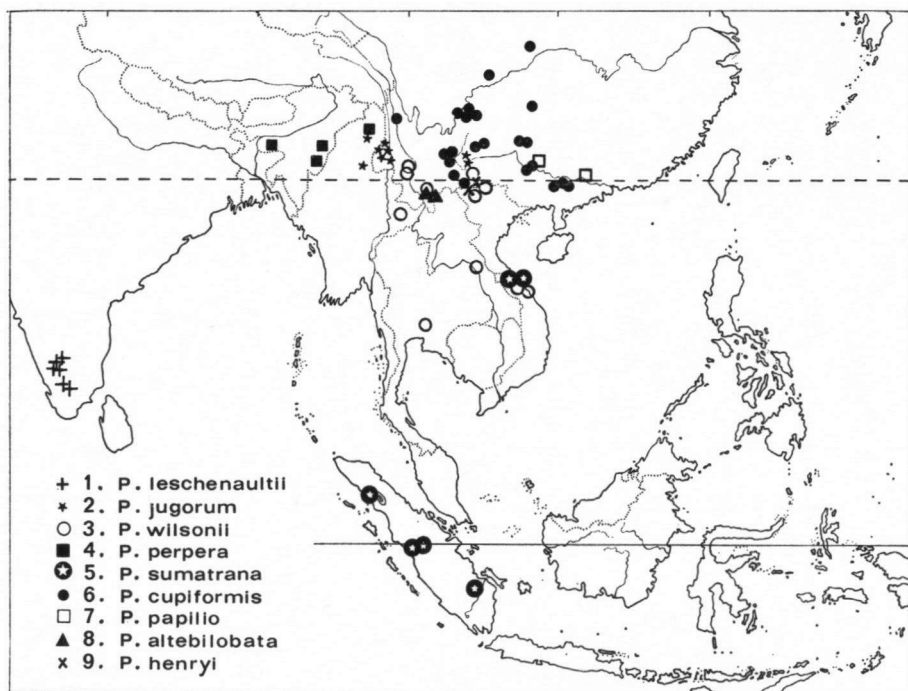


Fig. 4. Localities of various *Passiflora* species with truncate or lobed leaves of Group I.

#### Ecology. 1000—1500 m.

5. *Passiflora sumatrana* Bl., Rumphia 1 (1837) 170, in obs. — *Anthactinia sumatrana* Roem., Syn. Mon., 2 Pepon. (1846) 191. — *Disemma sumatrana* Miq., Fl. Ind. Bat. I, 1 (1856) 700.—Fig. 1 e-e'; 4.

Climber c. 10 m high, stem and leaves glabrous or glabrescent. *Leaves* ovate-elliptic with top truncate-tricuspidate, or (2—)3-lobed, base subacute to cordate, 6—12 by 5—13 cm, with 0—2 small glands in the upper part on the lower surface; midrib ending in a mucro c. 1 mm; lobes up to 1½ cm, obtuse or acute. Petiole 2—6½ cm, with 2 glands ⅓—½ (—½) from the base. *Inflorescences* (sub)sessile, 2—14-flowered, glabrous. Pedicels 5—15 mm. *Flowers* whitish, (2½—)3—4 cm diam.; stipe 8—12 mm. Hypanthium (6—)7 mm wide. Sepals 10—15 mm, with minute subapical wart, glabrous. Petals 10—13 mm. Outer corona threads 5—8 mm, inner threads 1½—3 mm. Inner corona 1—2 mm high. Disk c. ½ mm high. Androgynophore 7—8 mm. Stamens 5; filaments c. 7 mm, free; anthers (3½—)4 by 1½ mm. Ovary sessile, ellipsoid, glabrous, 3—4 by 1½—2½ mm; styles 3, curved upward, 6—7 mm long. *Fruit* subglobose-ellipsoid, (2—)2½ by 2 cm, glabrous.

VIETNAM. Annam: Poilane 29864 (P); Vidal 797 A (L, P).

MALESIA. Sumatra: Bünnemeyer 2804 (BO, L); Korthals s.n. (L); Praetorius (n. 96) (L, type); Surbeck 183 (L).

#### Ecology. 1000—1800 m.

**Note.** The leaves of the specimens from Vietnam (both from Nui Bach Ma) deviate from those from Sumatra by having a more cuneate base and larger lateral lobes. Until more material is available for closer study, they are kept with *P. sumatrana*.

6. *Passiflora cupiformis* Mast. in Hook. f.,  *Ic. Pl.* 18 (1888) t. 1768.—Fig. 1 f; 4.  
*P. franchetiana* Hemsl. in Hook. f.,  *Ic. Pl.* 27 (1899) sub t. 2623.  
*P. seguinii* Lévl. & Vanihot,  *Bull. Acad. Géogr. Bot.* II (1902) 174.  
*P. kwangsiensis* Li,  *J. Arn. Arb.* 24 (1943) 447.  
*P. yunnanensis* Franchet,  *nom., p.p.*; see Cusset,  *Adansonia* 2, 7 (1967) 375.

Climber to c. 5 m, stem glabrescent, not angular. *Leaves* glabrous or glabrescent, truncate to deeply 2-lobed, base rounded to cordate, up to 1 mm peltate, 5—15 by 4—11½ cm, with 6—25 glands on lower surface, midrib ending in a mucro up to 2 mm; lobes up to 8 cm, obtuse to subacute. Petiole 3—7 cm, with 2 glands at ¼—⅓ from the base. *Inflorescences* (sub)sessile, (1—)5—20-flowered, brownish pubescent. Pedicels 2—5 mm. *Flowers* whitish, 1½—2 cm diam; stipe 4—6 mm. Hypanthium 5—7 mm wide. Sepals 8—10 mm, with or without a subapical gland or horn up to 1 mm, pubescent. Petals 7—8½ mm. Outer corona threads 8—9 mm, inner threads 2—3 mm long. Inner corona plicate, c. 1½ mm high. Disk c. ⅓ mm high. Androgynophore 3—5 mm. Stamens 5; filaments 4½—6 mm, free; anthers 2½—3 by 1½—2 mm. Ovary (sub)globose, sessile, c. 2 by 1½—2 mm, glabrous; styles 3, free, curved upward, c. 4 mm long. *Fruit* globose, 1—1½ cm diam., glabrous.

CHINA. Szechuan Prov.: *Faber* 115 (K, type *P. cupiformis*, n.v.; NY); *Tsiang* 8544 (C, E, NY, S, US, W); *Wilson* 4626 (A, US) — Kweichow Prov.: *Cavalerie* 1914 (P), 1912 (P), 3504 (E, P); *Cavalerie & Fortunat* 2004 (P); *Esquirol* 39 (859) (E), 3650 (E); *Handel-Mazzetti* 10411 (A, W); *Léveillé* 2004 (E); *Séguin & Bodinier* 2350 (E, P, type *P. seguinii*) — Yunnan Prov.: *Delavay* 2417 (P), 2802 (P); *Ducloux* (coll. *Tén*) 1317 (E); *Forrest* 10741 (A, E), 12702 (E), 13068 (E), 13105 (E); *Henry* 11192 (A, E, K, type *P. franchetiana*, n.v.; NY, US); *Maire* 496 (A), 6241 (distr. Bonati) (B, NY, S, W); *Tén* 206 (E), 6320 (P); *H. Wang* 41489 (A) — Kwangsi Prov.: *R. C. Ching* 6688 (A, NY, W); *Lau* 28498 (A); 28577 (A, type *P. kwangsiensis*, n.v.); *Steward & Cheo* 395 (A-GH, NY, P, S, W); *C. Wang* 40876 (A), 40883 (A).

**Ecology.** 1000—3000 m.

7. *Passiflora papilio* Li,  *J. Arn. Arb.* 24 (1943) 447. — Fig. 1 g; 4.

Climber to c. 2 m, stem short-pubescent or glabrescent. *Leaves* glabrescent, truncate-bilobed, base broadly rounded, (1—)2 mm peltate, 4—7 by 5—14 cm, with 4—6 large glands on the lower surface, midrib ending in a mucro up to ¼ mm; lobes 2—8 cm, acute (—acuminate). Petiole 2—3 cm, with 2 glands on conspicuous auricles at about ½ from the base. *Inflorescences* sessile, finely brownish pubescent, 5—20-flowered. Pedicels 2—5 (—6) mm. *Flowers* whitish, c. 1 cm diam.; stipe 2½ mm. Hypanthium 4½ mm wide. Sepals 5—6 mm, not horned, finely pubescent. Petals 5 mm. Outer corona threads 3½—4 mm, inner threads 1½ mm. Inner corona plicate, 1½ mm high. Disk ⅓ mm high. Androgynophore 4½ mm. Stamens 5; filaments 3 mm, free; anthers 2½ by 1 mm. Ovary sessile, ovoid, 2 by 1¼ mm, glabrous; styles 3, free, curved upward, 2 mm long. *Fruit* not known.

CHINA. Kwangsi Prov.: *R. C. Ching* 6570 (M, NY, W); *S. P. Ko* 55426 (A, type, n.v.).

**Ecology.** 900 m.

**Note.** The type, in A, was not examined, but the original description of this characteristic species leaves no doubt about its identity.

8. *Passiflora altebilobata* Hemsl., Kew Bull. (1908) 17. — Fig. 1 h; 4.

Climber to *c.* 2 m, stem not angular,  $\frac{1}{2}$ –1 mm pubescent. *Leaves* pubescent or glabrescent, deeply 2-lobed, base rounded to subacute, slightly peltate,  $2\frac{1}{2}$ –9 by 2–7 cm, with up to 4 small glands near the top on the lower surface, midrib ending in a mucro 1–2 mm; lobes 2–6 cm, (sub)acute. Petiole 1– $2\frac{1}{2}$  cm, with 2 glands at  $\frac{1}{2}$ – $\frac{3}{4}$  from the base. *Inflorescences* subsessile, 2–6-flowered, grey or brownish pubescent. Pedicels 5–10 mm. *Flowers* whitish,  $\frac{3}{4}$ –1 cm diam.; stipe 1–5 mm. Hypanthium 4 mm wide. Sepals 5–7 mm, without gland or horn, pubescent. Petals  $3\frac{1}{2}$ –6 mm. Outer corona threads *c.* 5 mm, inner threads *c.* 1 mm long. Inner corona plicate, 1– $1\frac{1}{2}$  mm high. Disk  $\frac{1}{2}$  mm high. Androgynophore  $2\frac{1}{2}$ –3 mm. Stamens 5; filaments 3 mm, free; anthers 2 by  $1\frac{1}{2}$  mm. Ovary ovoid-ellipsoid, sessile,  $1\frac{1}{2}$  by  $\frac{3}{4}$ –1 mm, glabrous; styles 3, free, curved upward,  $2\frac{1}{2}$ –3 mm long. *Fruit* subglobose, 1– $1\frac{1}{2}$  cm diam., glabrous.

CHINA. Yunnan Prov.: Henry 12987, 12987A (K, type, *n.v.*; NY); Rock 2851 (US).

*Ecology.* 1200–1620 m.

9. *Passiflora henryi* Hemsl. in Hook. f., Ic. Pl. 27 (1899) t. 2623. — Fig. 1 i; 4.

Climber to *c.* 3 m, stem glabrescent, angular. *Leaves* glabrescent, truncate-obtuse, top sometimes slightly acute-acuminate, base rounded,  $2\frac{1}{2}$ – $8\frac{1}{2}$  by 3– $9\frac{1}{2}$  cm, with 2–4 glands on the lower surface, midrib ending in a mucro *c.* 1 mm. Petiole  $1\frac{1}{2}$ –6 cm, with 2 glands at the top. *Inflorescences* sessile, thinly pubescent, 2–8-flowered. Pedicels 10–25 mm. *Flowers* whitish, 2– $2\frac{1}{2}$  cm diam.; stipe 1– $2\frac{1}{2}$  mm. Hypanthium *c.* 5 mm wide. Sepals 8–10 mm, not horned, slightly pubescent. Petals 7–8 mm. Corona threads in 1 row, 6–8 mm. Inner corona plicate, *c.* 1 mm high. Disk  $\frac{1}{4}$  mm high. Androgynophore  $4\frac{1}{2}$ –5 mm. Stamens 5; filaments 4–5 mm, free; anthers 2– $2\frac{1}{2}$  by  $1\frac{1}{4}$  mm. Ovary subglobose, sessile, *c.*  $1\frac{1}{2}$ –2 by  $1\frac{1}{2}$  mm, pubescent; styles 3, patent or curved upward, 4–5 mm long. *Fruit* globose,  $1\frac{1}{4}$ – $1\frac{1}{2}$  cm diam., glabrous.

CHINA. Yunnan Prov.: Henry 10252 (10282) (A; K, type, *n.v.*; NY, US; Leduc *s.n.* (P).

*Ecology.* 1300–1600 m.

*Note.* Of this species Wu & Wang (1957) cited a number of collections not available to me, from about the same area.

10. *Passiflora moluccana* Reinwardt ex Bl., Bijdr. (1826) 938.

Climber to 6 m, stem hairy or glabrous. *Leaves* spirally arranged or, in specimens of var. *teysmanniana* from the Asian continent, (sub)opposite, mostly velutinous beneath, entire (very rarely shallowly 3-lobed), lanceolate to elliptic or ovate, top acute-(acuminate) to obtuse or rounded, or  $\pm$  retuse, base obtuse to (sub)cordate, 5–16 by (1–) $1\frac{1}{2}$ –10 cm, with 2–15 glands on the lower surface. Petiole  $\frac{3}{4}$ –3 cm, with 2 glands in the upper half. *Inflorescences* (sub)sessile, 2–15-flowered, pubescent or glabrous. Pedicels 5–25 mm. *Flowers* whitish, 3– $4\frac{1}{2}$  cm diam.; stipe 5–20(–25) mm. Hypanthium 6–9 mm wide. Sepals 10–20 mm, not horned, pubescent, rarely glabrous. Petals 10–18 mm. Outer corona threads 10–18 mm, inner threads 1–3 mm. Inner corona plicate,  $1\frac{1}{2}$ –2 mm high. Disk *c.*  $\frac{1}{2}$  mm high. Androgynophore 5–10 mm. Stamens 5; filaments (5–)6–10

mm, free; anthers 3—5 by  $1\frac{1}{2}$ —2 mm. Ovary (sub)sessile, globose to ellipsoid, 2—4 by  $1\frac{1}{2}$ —3 mm, densely pubescent to glabrous; styles 3, free, curved upward, 5—8 mm. Fruit 2—3 by  $1\frac{1}{2}$ —2 $\frac{1}{2}$  cm, hairy or glabrous.

For characters of the varieties see the key to the species.

**a. var. moluccana** — *Anthactinia moluccana* Roem., Syn. Mon., 2 Pepon. (1846) 190. — *Disemma moluccana* Miq., Fl. Ind. Bat. I, 1 (1856) 699. — Fig. 2 j; 5.

*P. moluccana* Bl. var. *timorensis* Bl., Rumphia 1 (1837) 169, t. 51 A. — *P. timoriana* Span., Linnaea 15 (1841) 207; Ic. ined. t. 76, nom. — *Anthactinia timorensis* Roem., Syn. Mon., 2 Pepon. (1846) 191. — *Disemma timoriana* (Bl., pro var.) Miq., Fl. Ind. Bat. I, 1 (1856) 700.

MALESIA. Moluccas (Buru, Ceram, Amboina group): *Binnendijk s.n.* (BO); *Boerlage 361* (BO); *Dol(l)eschal 378* (W); *Kornassi 1135* (BO); *Reinwardt 1435* (L, type *P. moluccana*); *Robinson 1659* (BO, L, US), 1661 (A-GH, NY, US); *Treub s.n.* (BO, L); *Teysmann & De Vriese s.n.* (L) — Lesser Sunda Is. (Timor): *Forbes 3792* (A, BO, L); *Spanoghe s.n.* (L, type *P. moluccana* var. *timorensis*).

Ecology. 100—1000 m.

**b. var. teysmanniana** (Miq.) de Wilde, Fl. Mal. I, 7 (1972) in press — *P. horsfieldii* Bl., Rumphia 1 (1837) 170, t. 52, 1. — *Anthactinia horsfieldii* Roem., Syn. Mon., 2 Pepon. (1846) 191. — *Disemma horsfieldii* Miq., Fl. Ind. Bat. I, 1 (1856) 700 (incl. var. *teysmanniana*). — Fig. 2 k-k''; 5.

*P. pallida* (non L.) Lour., Fl. Cochinch. 2 (1790) 527. — *P. cochinchinensis* Spreng., Syst., 4, cur. post. (1827) 346.

*P. chinensis* Sweet, Hort. Brit., ed. 1 (1826) 355, nom. (identity not sure; possibly it is *P. caerulea* L.).

*P. ligulifolia* Mast., Trans. Linn. Soc. Lond. 27 (1871) 632.

*P. hainanensis* Hance, J. Bot. 16 (1878) 227.

*P. philippinensis* Elmer, Leaf. Phil. Bot. 1 (1908) 326.

*P. horsfieldii* Bl. var. *elbertiana* Hall. f., Med. Rijksherb. 42 (1922) 6.

CHINA. Kwangtung Prov.: *Tsang 2222* (NY), 2264 (NY), 2305 (2303) (NY), 2680 (NY) — Hong Kong: *Wright 481* (A-GH; K, type *P. ligulifolia*, n.v.; US; a glabrous-leaved specimen) — Hainan: *Anon. 105* (E); *Chun & Tso 43413* (A-GH); *Ford s.n.* (NY); *Fung 20050* (A), 20060 (NY, P, US); *How & Chun 70082* (A-GH, NY, US); *How 70851* (A-GH, B, NY, US), 71889 (A); *Lau 99* (A, B, E, MICH, NY, P, SING, US, W), 1400 (A, NY, P), 3450 (A, P, S), 5444 (A), 6198 (A); *Lei 564* (B, BO, L, NY, P, SING, US, W), 742 (A, BO, NY, US); *Ling 61601* (E, NY, P), 61615 (B, NY, US), 61932 (A, NY, P, S, US), 65001 (A, NY), 65380 (A, NY); *MacClure 9514* (A), 20079 (A, NY, US); *Tsang 57* (B, E), 58 (A, BO, P, US, W); *Tsang, Tang & Fung 135* (A), 135 (17666) (NY); *Wang 32778* (A, NY).

LAOS. *Poilane 13259* (P, a glabrous specimen).

VIETNAM. Tonkin: *Bon 5322* (P), 5477 (P), 5608 (P) — Annam: *d'Alleizette s.n.* (L, P); *Clemens 3904* (NY, P, U); *Eberhardt 3178* (P, a specimen with lobed leaves), 3180 (P); *Gaudichaud s.n.* (*Hb. Webbianum*) (FI, leaves glabrous), 199 (P, leaves partially lobed); *Hb. O. Kuntze 3646* (NY); *Poilane 1354* (P, a specimen with glabrous leaves), 1461 (P), 2694 (P), 2695 (P), 5880 (P, neotype of *P. cochinchinensis* Spreng, chosen by Cusset, 1967), 6357 (P), 9648 (P), 9671 (P), 9947 (P) — Cochinchina: *d'Alleizette s.n.* (L, a glabrous-leaved specimen).

MALESIA. Java: *Backer 16989* (BO); *Beumée 4709* (BO); *Horsfield s.n.* (Madura) (E, L; K, type *P. horsfieldii*); *Teysmann s.n.* (L; U, type *Disemma horsfieldii* var. *teysmanniana*); *Zollinger 2904* (A, FI, W) — Bali: *Anon. s.n.* (L) — Sumbawa: *De Voogd 2211* (BO, L); *Zollinger 1091* (P) — Flores: *Kostermans & Wirawan s.n.* (BO, L); *Rensch 1362* (BO); *Schmutz 1717* (L); *De Voogd 2839* (A, BO, L); *Weber s.n.* (L) — Philippines: *Elmer 8985* (A, BO, E, FI, L, NY; US, type *P. philippinensis*; W); *Ramos & Edaña BS 38098* (US) — Celebes (Kabaena I.): *Elbert 3259* (A; L, type *P. horsfieldii* var. *elbertiana* Hall. f.).

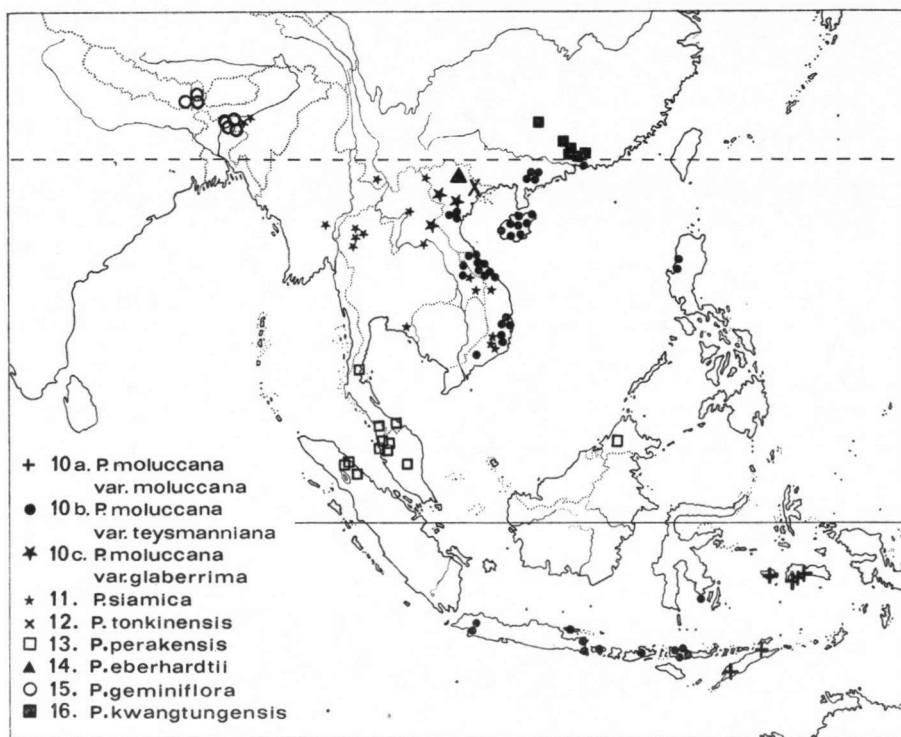


Fig. 5. Localities of various *Passiflora* species with entire, non-truncate leaves of Group I.

**Ecology.** 100—1000 m.

**Note.** As indicated with the material listed above, the leaves of some specimens are glabrous and as an exception lobed.

**c. var. glaberrima** (Gagn.) de Wilde, *comb. nov.* — *P. octandra* Gagn. var. *glaberrima* Gagn., Bull. Mus. Hist. Nat. Paris 25 (1919) 129. — *P. cochinchinensis* Spreng. subsp. *glaberrima* Cusset, Fl. Camb., Laos, Vietn. 5 (1967) 127. — Fig. 2 l; 5.

LAOS: *Spire* 1105 (*P.*, type *P. octandra* var. *glaberrima*).

VIETNAM. Tonkin: *Eberhardt* 2886 (*P.*); *Pételot* 7793 (7795) (*A.*, *P.*); *Poilane* 1618 (*E.*, *P.*).

**Ecology.** 500 m.

**II. *Passiflora siamica*** Craib, Kew Bull. (1911) 55. — Fig. 2 m; 5.

*P. octandra* Gagn., Bull. Mus. Hist. Nat. Paris 25 (1919) 128 (incl. var. *attopensis* and var. *cochinchinensis*), non Thompson, nom. sub *Deidamia thompsoniana* (DC., 1828).

*P. wangii* Hu, nom. (sub *P. octandra* in Wu & Wang, Acta Phytotax. Sin. 6, 1957, p. 236).

Climber to c. 8 m, stem pubescent,  $\pm$  angular. Leaves mostly pubescent or hispidulous (especially beneath), ovate-elliptic to lanceolate, top acute-acuminate, base subacute to

subcordate, 5—23 by 1—7 cm, with (0—)2—8 glands on the lower surface. Petiole 1—4 cm, with 2 glands at or somewhat below the middle (rarely at the top, see note). *Inflorescences* (sub)sessile, brownish pubescent, (2—)4—15-flowered. Pedicels 5—20 mm. *Flowers* whitish,  $2\frac{1}{2}$ —3 cm diam.; stipe 3—15 mm. Hypanthium 7—10 mm wide. Sepals 9—12 mm, not horned, pubescent. Petals 9—10 mm. Outer corona threads 7—10 mm, inner threads  $1\frac{1}{2}$ —4 mm. Inner corona plicate, 2— $2\frac{1}{2}$  mm high. Disk c.  $\frac{1}{2}$  mm high. Androgynophore 3—5 mm. Stamens 5—8; filaments 10—11 mm, connate at base for  $1\frac{1}{2}$ — $4\frac{1}{2}$  mm; anthers 3—4 by 1—2 mm. Ovary (sub)sessile, ellipsoid, 2—3 by  $1\frac{1}{2}$ — $2\frac{1}{2}$  mm, pubescent; styles 3—5, erect from the base, 4—9 mm, connate at base for up to 2 mm. *Fruit* mostly 1 or 2 per inflorescence, subglobose,  $1\frac{1}{2}$ —2 cm diam., sparingly pubescent.

INDIA. Assam: Chatterjee s.n. (HBG, P); Koelz 22627 (L).

CHINA. Yunnan Prov.: C. W. Wang 74891 (A, W).

BURMA. Kingdon Ward 8843 (NY).

THAILAND. Payap: van Beusekom & Phengklai 1083 (L); A. F. G. Kerr 1049 A (E; K, syntype *P. siamica*, n.v.), 1256 (C; K, syntype *P. siamica*, n.v.; P); Put 3855 (A, E, L) — Udawn: Kerr 20712 (K) — Chantaburi: Kerr 18027 (K, L; a deviating specimen).

LAOS. Harmand 1267 (P, type *P. octandra* var. *attopensis*); Poilane 12168 (P), 26133 (P); Thorel s.n. (P), 9160 (3169) (P, type *P. octandra*).

VIETNAM. Tonkin: Poilane 25861 (P) — Annam: Poilane 22496 (P), 22782 (P), 24281 (P), 32835 (P) — Cochinchina: Pierre 1628 (A, A-GH, BO, E, NY; P, type *P. octandra* var. *cochinchinensis*).

**Ecology.** (50—)500—1500 m.

**Note.** The species is very variable in habit of leaves and in the flowers. The number of stamens varies from 5 to 8, the styles from 3 to 5. The specimen Kerr 18027 from Thailand (50 m alt.) strongly deviates by its  $\pm$  cordate leaves which are glabrescent on the upper surface, and have the petiolar glands situated at the apex of the petiole, not about halfway. The flowers are relatively large and have 5 stamens and 3 styles. Possibly it represents a new species.

## 12. *Passiflora tonkinensis* de Wilde, *sp. nov.*—Fig. 2 n; 5; 6 b.

Liana parva, glabra. *Folia* oblongo-lanceolata, apice obtusa, integra, 9— $12\frac{1}{2}$  cm longa, 3— $4\frac{1}{2}$  cm lata, subtus glandulis 5—12 ornata; petiolus c. 1 cm longus, medio glandulis duabus instructus. *Inflorescentiae* biflorae, subsessiles. Pedicelli 30—40 mm longi. Bractee bracteolaeque lineares, acutae, 2 mm longae. *Flores*  $3\frac{1}{2}$ —4 cm diam.; stipes 5—7 mm longes. Hypanthium  $1\frac{1}{2}$ —2 mm longum, 8—9 mm latum. Sepala lata, obtusa, albida, c. 14 mm longa. Petala albida, c. 14 mm longa. Coronae fila exteriora c. 7 mm, interiora 3—5 mm longa. Corona interior plicata, 3 mm alta. Discus  $\frac{1}{2}$ — $\frac{3}{4}$  mm altus. Androgynophorium 4 mm longum. Stamina 7; filamenta 13 mm longa, per c. 5 mm connata; antherae 4 mm longae,  $1\frac{1}{2}$  mm latae. Ovarium  $2\frac{1}{2}$  mm longum, 2 mm latum, pubescens; styli 3 vel 4, liberi, erecti, 11—12 mm longi; stigmata c.  $1\frac{1}{2}$  mm diam. *Fructus* ignotus.

Small glabrous climber. *Leaves* entire, oblong-lanceolate, obtuse, 9— $12\frac{1}{2}$  by 3— $4\frac{1}{2}$  cm, with 5—12 glands on the lower surface; petiole c. 1 cm, with 2 glands at about the middle. *Inflorescences* 2-flowered, subsessile. Pedicels 30—40 mm. Bracts and bracteoles linear, acute, 2 mm. *Flowers*  $3\frac{1}{2}$ —4 cm  $\varnothing$ ; stipe 5—7 mm. Hypanthium  $1\frac{1}{2}$ —2 by 8—9 mm. Sepals whitish, broad, obtuse, c. 14 mm long. Petals whitish, c. 14 mm. Outer corona threads c. 7 mm, inner corona threads 3—5 mm. Inner corona plicate, 3 mm high. Disk  $\frac{1}{2}$ — $\frac{3}{4}$  mm high. Androgynophore 4 mm. Stamens 7; filaments 13 mm long, connate

for c. 5 mm; anthers 4 by  $1\frac{1}{2}$  mm. Ovary  $2\frac{1}{2}$  by 2 mm, pubescent; styles 3 or 4, free, erect, 11–12 mm long; stigmas c.  $1\frac{1}{2}$  mm  $\varnothing$ . Fruit not known.

VIETNAM. Tonkin, Prov. de Langson, between Dong-Mo and Van Linh: Pételot 2203 (A-GH, type).

Ecology. Probably c. 500 m; savanna with shrubs.

Note. Characterized by the 7 long-connate filaments, the 3 or 4 free erect styles, and the glabrous leaves.

**13. *Passiflora perakensis* Hall. f., Med. Rijksherb. Leiden 42 (1922) 5. — Fig. 2 o; 5.**

*P. horsfieldii* (non Bl.) King, J. As. Soc. Beng. 71, 2, 1 (1903) 50.

*P. horsfieldii* Bl. var. *distans* Craib, Fl. Siam. Enum. (1931) 743.

Climber c. 10 m, stem and leaves (especially beneath) rather stiff hairy. Leaves ovate-elliptic to oblong, top acute (–acuminate), (0–)1–3 mm mucronate, base rounded to subcordate, 5–18 by  $2\frac{1}{2}$ –9 cm, with 4–16 glands on the lower surface. Petiole 1–5 cm, with 2 glands at  $\frac{1}{4}$ – $\frac{1}{2}$  from the base. Inflorescences (sub)sessile, 4–20-flowered, hairy. Pedicels 10–30 mm. Flowers whitish, 2–3 (– $3\frac{1}{2}$ ) cm diam.; stipe 5–15 (–22) mm. Hypanthium 7–10 mm wide. Sepals 10–15 (–20) mm, not horned, sparingly pubescent. Petals 8–15 mm. Outer corona threads 6–10 mm, inner threads (1–)2–3 mm. Inner corona plicate, 2–3 mm high. Disk c.  $\frac{1}{8}$  mm high. Androgynophore 5–6 (–7) mm. Stamens 5; filaments 9–15 mm, connate at base into a tube 4–10 mm enveloping the ovary; anthers  $2\frac{1}{2}$ –4 (–5) by 1– $1\frac{1}{2}$  mm. Ovary on a gynophore up to  $1\frac{1}{2}$  mm, ellipsoid, hirsute, 2–4 (–5) by  $1\frac{1}{2}$ – $2\frac{1}{2}$  mm; styles 3, erect, 5–7 mm long, connate up to 3 mm. Fruits 2–7 per inflorescence, subglobose, ( $1\frac{1}{2}$ –)2– $2\frac{1}{2}$  by  $1\frac{1}{2}$ –2 cm, sparingly hispid.

THAILAND. Surat: Haniff & Nur 4380 (SING) — Pattani: Keith 407 (K, syntype *P. horsfieldii* var. *distans*, n.v.; SING).

MALESIA. Malay Peninsula, Kedah: Haniff 10402 (BO, SING); Perak: King's Coll. (Goping) 5936 (BO, E, M, P, W); Haniff 4008 (SING), 13135 (SING); King's Coll. 4104 (FI); Ridley 14613 (SING); Scortechini 2192 (L, type *P. perakensis*; P); Pahang: Machado s.n. (SING) — Sumatra: Lörzing 5417 (BO), 6032 (BO), 12787 (K, L, U); Rahmat si Toroes 51 (A, MICH, NY, SING) — Borneo, Sabah, Keningau Distr.: Aban & Nicholes SAN 65383 (K, L).

Ecology. 150–500 m.

Note. Related to *P. siamica*.

**14. *Passiflora eberhardtii* Gagn. in Lecomte, Fl. Gén. I.-C. 2 (1921) 1020.—Fig. 2 p; 5; 6 a.**

Climber, stem puberulous. Leaves glabrous, entire, ovate, top acute-acuminate, base cordate, (4–)8–15 by (3–)5–10 cm, with 20–50 small scattered glands on the lower surface. Petiole (2–)4–6 cm, with 2 large glands at the very base. Inflorescences (sub) sessile, 10–20 (–30)-flowered. Pedicels 10 (–20) mm. Flowers whitish, 1– $1\frac{1}{2}$  cm diam.; stipe 3 mm. Hypanthium c. 5 mm wide. Sepals c. 6– $6\frac{1}{2}$  mm, with a subapical horn  $1\frac{1}{2}$ –2 mm, puberulous. Petals c. 5 mm. Corona threads in 1 (or 2) row(s), ( $1\frac{1}{2}$ –)3 mm. Corona plicate, c.  $1\frac{1}{4}$  mm high. Disk absent. Androgynophore c. 2 mm. Stamens 5; filaments c.  $2\frac{1}{2}$  mm long, free; anthers  $2\frac{1}{2}$  by  $\frac{3}{4}$  mm. Ovary sessile, obovoid,  $2\frac{1}{2}$  by  $1\frac{1}{2}$  mm, glabrous; styles 3, free, curved upward, 2– $2\frac{1}{2}$  mm long. Fruit not known.

VIETNAM. Tonkin: Eberhardt 4705 (P, type).



**Ecology.** Not known.

**Note.** This species is only known from the type-collection Eberhardt 4705, from Chu Bo, Prov. de Bac Kan, in North Vietnam. It is reported as a liana of 15–20 m long, with white flowers.

Cusset (1967) mentions the flowers as without petals, stating that the petals as mentioned by Gagnepain in the original description are the corona threads. I examined the type specimen which is accompanied by the fragments of the flower bud apparently studied by Gagnepain. Another mature flower bud, in the stage just before anthesis, was present on the specimen and has been examined by me. In this I found that normal petals are present. Because of the scantiness of the material of this obviously rare species, the flower, in longitudinal section, is figured in fig. 6 a. The habit of the inflorescence is depicted by Cusset, Bull. Soc. Bot. France 115 (1967) 51, f. 3, in an article dealing with the tendrils in *Passifloraceae*.

**15. *Passiflora geminiflora*** D. Don, Prod. Fl. Nepal (1825) 631. — *P. napalensis* Wall., Tent. Fl. Nepal (1826) 20, t. 11, *nom. illeg.* — *Anthactinia nepalensis* Roem., Syn. Mon., 2 Pepon. (1846) 190. — Fig. 2 q; 5.

Climber to c. 2½ m, stem glabrescent. *Leaves* glabrescent, ovate to lanceolate, top acute, 1–2 mm mucronate, base rounded to cordate, 4–10 by 1½–6½ cm, with 2–6 conspicuous glands rather close to the nerve-bases on the lower surface. Petiole 2–5½ cm, with 2 glands at ¼–½ from the base. *Inflorescences* sessile, sparingly pubescent, 2–6 flowered. Pedicels 10–15 mm. *Flowers* whitish, 1½–2 cm diam.; stipe 1½–3 mm. Hypanthium 4–5 mm wide. Sepals 7–9 mm, not horned, glabrescent. Petals 6–7 mm. Corona threads in 1 row, 5–6 mm. Corona plicate, 2½ mm high. Disk ½ mm high. Androgynophore c. 3½ mm. Stamens 5; filaments 5 mm, connate at base for c. ½ mm; anthers 2–2½ by 1 mm. Ovary sessile, subglobose, 1½–2 by 1½ mm, sparingly pubescent; styles 3, curved upward, 3½ mm. *Fruit* globose, 1–1½ cm diam., glabrous.

NEPAL. Wallich 1230 (BM, type, *n.v.*; K, *n.v.*).

INDIA. Sikkim: Craib 249 (BO) — Darjeeling: Cowan s.n. (E) — Assam: Bor 16151 (A); Clarke 38591 E (FI, Hb. Beccari); Haines BB. 879 (E); Hooker & Thomson s.n. (C, CAMB, E, FI, GH, K, L, M, MEL, NY, P, S, U, W); Koelz 30436 (MICH), 31106 (MICH); Thakur Rup Chand 2029 (L), 6103 (L, MICH).

**Ecology.** 1000–2000 m.

**Note.** I have not seen the type in BM, but the identity of this characteristic species is clearly established by its original description; Wallich (1826) gives a good figure. Chakravarty (1951) cites 25 collections of this species.

**16. *Passiflora kwantungensis*** Merr., Lingnan Sc. J. 13 (1934) 38.—Fig. 1 r; 5.

Climber to c. 2 m, stem and leaves glabrous or glabrescent. *Leaves* ovate-oblong, top long acute-acuminate, base rounded to cordate, 6–13 by 1½–4 cm, without glands. Petiole 1–2 cm, with 2 glands in the upper ½. *Inflorescences* sessile, 1- or 2-flowered, glabrescent. Pedicels 10–15 mm. *Flowers* whitish, c. 1½ cm diam.; stipe 4–6 mm. Hypanthium (4–)5 mm wide. Sepals c. 8 mm, not horned, glabrous or glabrescent. Petals c. 7 mm. Corona threads in 1 row, ± clavate, c. 2 mm. Inner corona plicate, c. 1½ mm high. Disk ¼ mm high. Androgynophore 4–5 mm. Stamens 5; filaments 3½ mm, connate at base for c. 1 mm; anthers 2½ by 1 mm. Ovary sessile, ellipsoid, 2½ by 1½ mm, glabrous; styles 3, curved upward, 2½ mm. *Fruit* globose, c. 1 cm diam., glabrous.

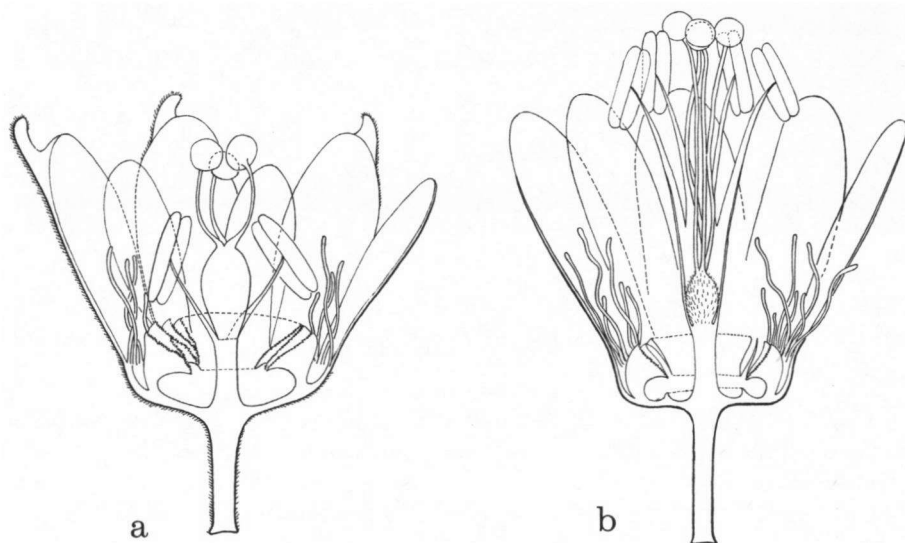


Fig. 6. Longitudinal sections of flowers of a: *P. eberhardtii* (opened flower bud just before anthesis,  $\times 5$ , Eberhardt 4705, type) and b: *P. tonkinensis* ( $\times 2\frac{1}{2}$ , Pételot 2203, type).

CHINA. Kwangsi Prov.: W. T. Tsang 27737 (A) — Kwangtung Prov.: Anon. 203—5372 (A); To Kang Peng c.s. 12274 (field n. 275) (US), 12524 (field n. 535) (US); W. T. Tsang 20609 (NY, type); Tso 20749 (NY).

**Ecology.** Altitude not known.

**Note.** Resembles in habit the introduced *P. suberosa* L., but this latter species has apetalous flowers.

**17. *Passiflora herbertiana*** Ker-Gawl. in Edwards' Bot. Reg. 9 (1823) t. 737. — *Murucaja herbertiana* Sweet, Hort. Brit. ed. 1, 2 (1826) 355. — *Disemma herbertiana* DC., Prod. 3 (1828) 332. — *Distemma herbertiana* Lemaire, Ill. Hort. 14 (1867) Misc. 57.—Fig. 3 s; 7. *P. verruculosa* Weinmann, Syll. Plant. Ratisb. I (1824) 228.

*Passiflora biglandulosa* Caley in Hb. Lambert ex DC., Prod. 3 (1828) 333, nom. — *Disemma herbertiana* var. *caleyana* DC., Prod. 3 (1828) 333. — *Disemma caleyana* Roem., Syn. Mon., 2 Pepon. (1846) 189. — *Passiflora herbertiana* var. *caleyana* Mast., Trans. Linn. Soc. Lond. 27 (1871) 634.

*P. distephana* F. v. M. ex Harms in E. & P., Nat. Pfl. Fam. 3, 6a (1893) 89, nom.

Climber to c. 5 m, pubescent or glabrescent. *Leaves* broadly ovate to suborbicular in outline, 3-lobed, base rounded to subcordate,  $2\frac{1}{4}$ —11 by  $1\frac{1}{2}$ —13 cm, thinly pubescent, with 0—2 small glands on the lower surface; lobes  $\frac{1}{2}$ —5 cm, acute (—acuminate), up to 1 mm mucronate. *Petiole* 1—7 cm, with 2 raised blackish glands at or near the top. *Inflorescences* sessile, 1-flowered. *Pedicels* 15—25 mm. *Flowers* greenish-yellow to orange, 5—7 cm diam., glabrescent; stipe 2—4 mm. *Hypanthium* 7—15 mm wide. *Sepals* 20—35 mm, slightly keeled. *Petals* 10—20 mm. *Outer corona* composed of threads in 1 row, 5—10 mm long, whitish; *inner corona* tubiform, 5—8 mm high, with folded-lobulate edge. *Disk* O. *Androgynophore* 15—25 mm. *Stamens* 5; *filaments* 10—15 mm, free;

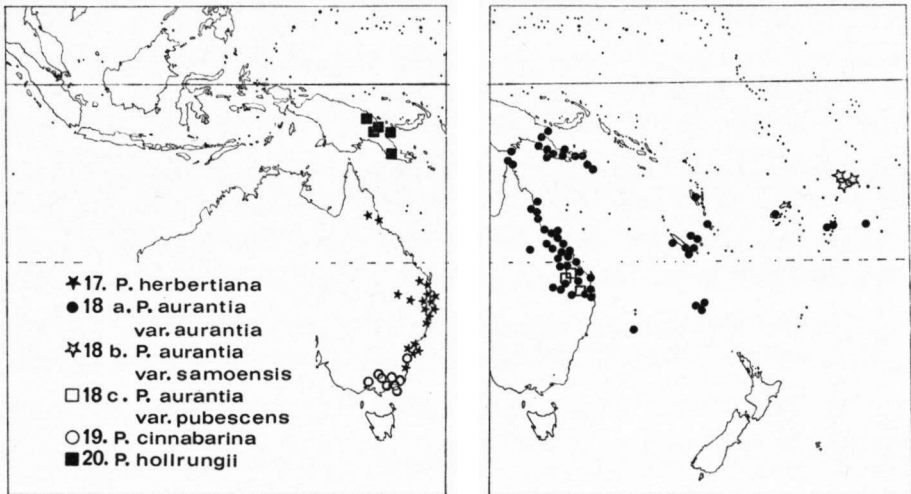


Fig. 7. Localities of the *Passiflora* species of Groups II and III.

anthers 6—10 by 2—2½ mm. Ovary stalked for 2—5 mm, ellipsoid, 4—7 by 2—3½ mm; glabrous; styles 3, free, 7—12 mm long. Fruit subglobose-ellipsoid, excl. stipe c. 5 by 4 cm, glabrous.

Of this species, occurring in Australia (Queensland and New South Wales) over sixty collections have been examined by me, not including those in BM, K, and P. They are not enumerated here, but most of the localities of these specimens have been plotted in fig. 7.

**Notes.** I have not seen the type of *P. herbertiana*, but the plant is well characterized by the original description and figure cited above. Of the var. *caleyana* DC. I have seen an isotype labelled 'Nova Hollandia, Caley' in W. Of both *P. verruculosa* and *P. distephana* I have not seen type-material.

In the Paris herbarium is one collection (*Hb. Reynier s.n.*) annotated as from Tasmania, but this is considered by me as an erroneously labelled specimen.

**18. *Passiflora aurantia* Forst. f., Florulae Ins. Austr. Prod. (1786) 621.**

Climber or creeper to 6 m, glabrous or glabrescent, rarely (var. *pubescens*) pubescent. Leaves broadly ovate to suborbicular in outline, 3(—5)-lobed, rarely entire, base subacute to cordate, 1½—10 by 2—13 cm, with 2—35 small glands on the lower surface; lobes ½—5 cm, acute to mostly obtuse, up to 1 mm mucronate. Petiole 1—5 cm, without or with 2 glands in the upper half, in var. *samoënsis* in the lower half. Inflorescences sessile, 1(or 2?)-flowered, glabrescent, rarely pubescent. Pedicels 5—20 mm. Flowers pink, orange or red, 4½—10 cm diam., glabrous; stipe 1½—8 mm. Hypanthium 8—17 mm wide. Sepals 20—45 mm, keeled. Petals (0—)5—20 mm. Outer corona composed of threads in 1 row, purplish, (5—)8—12(—18) mm long; inner corona tubular, 7—15(—20) mm long with lobed-undulate edge. Disk o. Androgynophore 20—35 mm. Stamens 5; filaments 7—11 mm, at base up to 2 mm connate; anthers 5—10 by 1½—3 mm. Ovary stalked for

1—2½ mm, 2½—6 by 1½—3½ mm, glabrous or glabrescent; styles 3, free, 5—10 mm long. Fruit subglobose to ellipsoid, 2½—5 by 2½—4½ cm, glabrous.

For characters of the varieties see the key to the species.

**a. var. aurantia** — *Murucuja aurantia* Pers., Syn. Pl. 2 (1807) 222. — *Disemma aurantia* Labill., Sert. Austr. Caled. (1824) 78, t. 79. — *Blephistelma aurantia* Rafin., Fl. Tellur. 4 (1836) 103. — *Distemma aurantiacum* Lemaire, Ill. Hort. 14 (1867) Misc. 57.—Fig. 3 t; 7.

*Passiflora glabra* Wendl., Coll. Plant. I (1805) 55, t. 11, non Miller 1768. — *P. adiantum* Willd., Enum. Hort. Berol. 2 (1809) 698. — *P. adiantifolia* Ker-Gawl., Bot. Reg. 3 (1817) t. 233. — *Murucuja adiantifolia* Sweet, Hort. Brit. ed. 1, 2 (1828) 355. — *Disemma adiantifolia* DC., Prod. 3 (1828) 333. — *Distemma adiantifolium* Lemaire, Ill. Hort. 14 (1867) Misc. 57.

*Murucuja baueri* Lindl., Collectanea Bot. (1821) t. 36. — *Disemma baueriana* Endl., Prod. Fl. Norfolk (1833) 66. — *Disemma baueri* G. Don, Gen. Syst. (1834) 56. — *Distemma baueriana* Lemaire, Ill. Hort. 14 (1867) Misc. 57. — *Passiflora baueriana* Mast., Trans. Linn. Soc. Lond. 27 (1871) 634.

*Disemma coccinea* DC., Prod. 3 (1828) 333 (*P. coccinea* Soland, in herb. Banks), nom., non Aubl., 1775. — *Distemma coccineum* Lemaire, Ill. Hort. 14 (1867) Misc. 57. — *Passiflora banksii* Benth., Fl. Austr. 3 (1866) 312. — *P. banksii* var. *typica* Domin, Bibl. Bot. Heft 89 (1928) 987. — *P. aurantia* var. *banksii* Bailey, Queensl. Agric. J. 26 (1911) 315.

*Disemma brachystephanea* F. v. M., Fragm. 1 (1858) 56. — *Passiflora brachystephanea* Benth., Fl. Austr. 3 (1866) 312. — *P. banksii* var. *brachystephanea* Domin, Bibl. Bot. Heft 89 (1928) 987.

*Disemma barclayi* Seem., Fl. Vit. (1865) 96. — *Passiflora barclayi* Mast., Trans. Linn. Soc. Lond. 27 (1871) 634.

*Disemma storckii* Seem., Fl. Vit. (1865) 96. — *Passiflora storckii* Drake, Ill. Fl. Ins. Mar. Pacif. (1890) 175.

*Disemma vitiensis* Seem., Fl. Vit. (1865) 96. — *Passiflora vitiensis* Mast., Trans. Linn. Soc. Lond. 27 (1871) 634.

*Passiflora samoënsis* (non Exell) Yuncker, Bern. P. Bish. Mus. Bull. 220 (1959) 193.

This variety occurs in East New Guinea, W. Australia, and in the Pacific. Over 150 collections from various herbaria (excluding BM, K, and P) have been examined by me. I have refrained from enumerating these, but most of the localities are plotted in fig. 7.

**Notes.** 1. The following types have been examined: *Forster 106* (S, type *Passiflora aurantia*); *Bauer s.n.* (W, type *Murucuja baueri*); *Bauer s.n.* (W, isotype? *Disemma coccinea*); *Banks & Solander s.n.* (MEL, W; isotype *Passiflora banksii*); *F. v. Mueller s.n.* (MEL, type *Disemma brachystephanea*).

2. In this variety the petiole is as a rule provided with glands; in specimens from Norfolk Island, however, the petiolar glands are usually lacking.

**b. var. samoënsis** (Exell) deWilde, Fl. Mal. I, 7 (1972) in press. — *P. samoënsis* Exell, J. Bot. 63 (1925) 203. — Fig. 3 u; 7.

SAMOA Is. *Betche 209* (MEL); *Bryan 181* (BO, US); *Buxton & Hopkins 640 G* (NY, isotype *P. samoënsis*); *Christophersen 260* (B, NY); *Christophersen & Hume 2027* (BO); *Rechinger 396* (W), 645 (W), 1103 (W), 5311 (W); *Whitmee s.n.* (A-GH, CAMB, E, MEL), 75 (MEL).

**Ecology.** 400–1000 m.

**Note.** The record *Yuncker 15942* (Bern. P. Bish. Mus. Bull. 220, 1959, p. 193) appeared to be the var. *aurantia*.

**c. var. pubescens** Bailey, Queensl. Agric. J. 26 (1911) 315, t. 31 fig. 2. — *P. baileyana* Domin, Bibl. Bot. Heft 89 (1928) 987. — **Fig. 3 v; 7.**

AUSTRALIA. Queensland: *Anon. s.n.* (BRI); *Hartmann s.n.* (in Hb. v. Mueller) (MEL); *Simmonds s.n.* (BRI).

**Ecology.** Not known.

**Note.** *P. baileyana* is based on *P. aurantia* var. *pubescens*. According to Bailey, the syntypes (Hall, Bancroft; not seen by me) are from Ipswich and Eidsvold, both in SE. Queensland.

**19. Passiflora cinnabarina** Lindl., Gard. Chron. (1855) 724. — **Fig. 3 w; 7.**

*Disemma ? muelleriana* Regel, Index Sem. Petrop. (1866) 101. — *Passiflora muelleriana* Mast., J. Hort. Soc. N.S. 4 (1877) 133.

*Distemma eglandulosum* Lemaire, Ill. Hort. 14 (1867) Misc. 56.

Climber to 4 m, glabrous. *Leaves* broadly ovate to suborbicular in outline, 3-lobed, base acute to cordate, 2–12 by 2½–13 cm, without or with 2 small glands beneath; lobes ½–8 cm, top obtuse to acute-acuminate. Petiole 2–4½ cm, without glands. *Inflorescences* sessile, 1-flowered. Pedicels 15–30 mm. *Flowers* red, 4½–6 cm diam., glabrous; stipe 3–5 mm. Hypanthium 6–10 mm wide. Sepals 20–30 mm, slightly keeled. Petals 8–10 mm. Outer corona composed of threads in 1 row 6–8 mm long, whitish; inner corona tubular, 5–6 mm long, whitish, with dense fine-fimbriate edge. Disk O. Androgynophore 18–20 mm. Stamens 5; filaments 11–13 mm, free; anthers 7–8 by 2 mm. Ovary stalked for 4–7 mm, c. 4–5 by 3 mm, glabrous; styles 3, free, c. 10 mm long. *Fruit* subglobose to ellipsoid, excl. stipe 3–4 cm long, glabrous.

AUSTRALIA. New South Wales: *Blakely s.n.* (US); *Constable 30143* (L, NY, U, US); *Fitzgerald s.n.* (Hb. v. Mueller) (MEL) — Victoria: *Hegi 439* (M); *Henley s.n.* (Hb. v. Mueller) (BO, SING); *King s.n.* (MEL); *Leilly s.n.* (MEL); *F. v. Mueller s.n.* (MEL); *Pescott s.n.* (MEL); *Rowe s.n.* (S); *Scott s.n.* (MEL); *Wall 187* (S); *Walter s.n.* (Hb. v. Mueller) (MEL).

**Ecology.** 0–500 m.

**Note.** This species, occurring in SE. New South Wales and Victoria is well known, and easily recognized from the original description and figure. I have not seen any type specimen.

**20. Passiflora hollrungii** K. Sch. in Engl., Bot. Jahrb. 9 (1888) 211. — **Fig. 3 x; 7.**

Climber to c. 10 m, pubescent. *Leaves* ovate to ellipsoid (–oblong), top acute-acuminate, up to 2 mm mucronate, base cordate to rounded, up to 2 mm peltate, 5–14 by 3–9½ cm, pubescent especially on the nerves, and with 2–10 submarginal glands on the lower surface. Petiole 2–4 cm, without glands. *Inflorescences* sessile, 1- or 2-flowered, pubescent. Pedicels 7–15 mm. *Flowers* bluish, 8–10 cm diam., glabrescent; stipe 5–12 mm. Hypanthium 9–12 mm wide. Sepals 40–50 mm. Petals 35–45 mm. Outer corona tubular, 20–30 mm long, with ± undulate-lobed edge, dark purple-blue; inner corona 1–2 mm, to halfway incised. Disk c. 1 mm high. Androgynophore 25–40 mm. Stamens

5; filaments 7—12 mm, free; anthers 8—9 by 2—3 mm. Ovary 2 mm stalked, densely pubescent, 5—7 by 3—4 mm; styles 3, free, 5—7½ mm long. *Fruit* subglobose to ellipsoid or  $\pm$  fusiform, excl. stipe 2½—3½ by 2—2½ cm, pubescent.

MALESIA. East New Guinea: *Brass* 32290 (L, US); *Carr* 14428 (L, SING); *Clemens* 276 (A, B, BRI, L), 3611 (A), 8936 (8936 a) (A); *Sayers* NGF 21268 (BM, L).

**Ecology.** (Secondary) montane forest, 1000—1650 m.

**Note.** The type, *Hollrung* 209, most probably collected near Hatzfeldhafen, is lost in Berlin, but the species is well characterized by its original description.

EXCLUDED FROM PASSIFLORA, OR NAMES PROPOSED FOR  
OLD WORLD TAXA WHICH HAVE APPEARED TO BE INTRODUCED.

*Anthactinia singaporeana* (Wall. ex G. Don) Roem., Syn. Mon., 2. Pepon. (1846) 192, base: *Passiflora singaporeana* Wall. ex G. Don = *Adenia macrophylla* (Bl.) Koord. var. *singaporeana* (Wall. ex G. Don) de Wilde. (*Passiflorac.*).

*Anthactinia walkeri*(ae) (Wight) Roem., Syn. Mon., 2. Pepon. (1846) 191, base: *Passiflora walkeri* Wight = *Passiflora suberosa* L.

*Disemma* ? nov. spec. Miq., Fl. Ind. Bat. 1, 1 (1856) 701 = ? *Passiflora edulis* Sims.

*Passiflora caerulea* Lour., Fl. Cochinch. (1790) 527 = *Passiflora caerulea* L. [fide Merr., Trans. Amer. Phil. Soc. 24, 2 (1935) 274].

*Passiflora calcarata* Mast., Trans. Linn. Soc. Lond. 27 (1871) 638 = *Passiflora subpeltata* Ortega.

*Passiflora caloneura* Kurz, J. As. Soc. Beng. 46, 2 (1877) 94 = *Aristolochia trilobata* L. (*Aristolochiac.*).

*Passiflora chinensis* Hort. ex Mast., J. Hort. Soc. N.S. 4 (1877) 145 = *P. caerulea* L.

*Passiflora chinensis* Sweet, Hort. Brit. ed. 1 (1826) 355; probably *P. caerulea* L., or *P. moluccana* Bl. var. *teysmanniana*.

*Passiflora coccinea* Blanco, Fl. Filip. ed. 1 (1837) 650, non Aubl., nec. Banks = *Adenia heterophylla* (Bl.) Koord. (*Passiflorac.*).

*Passiflora heyneana* Wall., Cat. 1233 (1829), nom. = *Erythralium populifolium* Mast. (*Erythraliac.*).

*Passiflora loureirii* G. Don., Gen. Syst. 3 (1834) 54, based on *P. caerulea* Lour., non L. = *P. caerulea* L. [fide Merr., Trans. Amer. Phil. Soc. 24, 2 (1935) 274].

*Passiflora mascarensis* Pres., Bot. Bemerk. (1844) 72 = *P. alata* Dryand.

*Passiflora mauritiana* Thouars, Ann. Mus. Par. 6 (1805) 457, t. 65 = *P. alata* Dryand.

*Passiflora mayana* Veitch. ex Voigt., Hort. Suburb. Cale. (1845) 81; Hort. ex Mast., J. Hort. Soc. N.S. 4 (1877) 146 = *P. caerulea* L.

*Passiflora minima* Blanco, Fl. Filip. ed. 1 (1837) 647, non L. = *Passiflora edulis* Sims [fide Merr., Spec. Blanc. (1918) 276].

*Passiflora parviflora* Blanco, Fl. Filip. ed. 1 (1837) 647, non Swartz = *Adenia heterophylla* (Bl.) Koord. (*Passiflorac.*).

*Passiflora penangiana* Wall. ex G. Don, Gen. Syst. 3 (1834) 55 = *Adenia penangiana* (Wall. ex G. Don) de Wilde (*Passiflorac.*).

*Passiflora pertriloba* Merr., J. Arn. Arb. 23 (1942) 186 = *Passiflora suberosa* L. (see also the note the the key).

*Passiflora pinardia* Buchoz., Herb. Pl. Méd. Chin. (1781) t. 30.: identity not known.

*Passiflora polignacia* Buchoz., Herb. Pl. Méd. Chin. (1781) t. 38 = *Passiflora murucuja* L. (according to Index Kewensis).

*Passiflora saponaria* Blanco, Fl. Filip. ed. 1 (1837) 650 = *Momordica cochinchinensis* Spreng. [fide Merr., Sp. Blanc. (1918) 371] (*Cucurbitac.*).

*Passiflora serrulata* (non Jacq.) Blanco, Fl. Filip. ed. 2 (1845) 452; ed. 3 (1879) 50, t. 414, based on *P. minima* Blanco = *Passiflora edulis* Sims.

*Passiflora singaporeana* Wall. ex G. Don., Gen. Syst. 3 (1834) 55 = *Adenia macrophylla* (Bl.) Koord. var. *singaporeana* (Wall. ex G. Don) de Wilde. (*Passiflorac.*).

*Passiflora tetrandra* Banks & Soland. ex DC., Prod. 3 (1828) 323 = *Tetrapathea tetrandra* (DC.) Cheeseman (*Passiflorac.*).

*Passiflora walkeri*(ae) Wight, Ill. Ind. Bot. 2 (1850) 39, t. 108 = *Passiflora suberosa* L.

*Passiflora zucca* Blanco, Fl. Filip. ed. 1 (1837) 648 = *Adenia heterophylla* (Bl.) Koord. (*Passiflorac.*).

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New names printed in bold type, synonyms in *italics*.

- Adenia heterophylla* (Bl.) Koord.: excl.  
*Adenia macrophylla* (Bl.) Koord. var. *singaporeana* (Wall. ex G. Don) de Wilde: excl.  
*Adenia penangiana* (Wall. ex G. Don) de Wilde: excl.  
*Anthactinia* Bory de St. Vincent = *Passiflora*  
*horsfieldii* Roem.: 10b.  
*muluccana* Roem.: 10a.  
*napalensis* Roem.: 15.  
*singaporeana* Roem.: excl.  
*sumatrana* Roem.: 5.  
*timorensis* Roem.: 10a.  
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*Aristolochia trilobata* L.: excl.  
*Blephistelma* Rafin. = *Passiflora*  
*aurantia* Rafin.: 18a.  
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*leschenaultii* Roem.: 1.  
*Disemma* = *Passiflora*  
*adanthifolia* DC.: 18a.  
*aurantia* Labill.: 18a.  
*barclayi* Seem.: 18a.  
*baueri* G. Don: 18a.  
*baueriana* Endl.: 18a.  
*brachystephanea* F. v. M.: 18a.  
*caerulea* Seem.: 18a.  
*caleyana* Roem.: 17.  
*coccinea* DC.: 18a.  
*herbertiana* DC.: 17.  
var. *caleyana* DC.: 17  
*horsfieldii* Miq.: 10b.  
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*moluccana* Miq.: 10a.  
*muelleriana* Regel: 19  
*storckii* Seem.: 18a.  
*sumatrana* Miq.: 5.  
*timoriana* Miq.: 10a.  
*vitiensis* Seem.: 18a.  
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*aurantiacum* Lemaire: 18a.  
*baueriana* Lemaire: 18a.  
*coccineum* Lemaire: 18a.  
*eglandulosum* Lemaire: 19.  
*herbertiana* Lemaire: 17.  
*Erythralium populifolium* Mast.: excl.  
*Momordica cochinchinensis* Spreng.: excl.  
*Murucuja* (*Murucua*) Tourn. ex Medik. = *Passiflora*  
*adanthifolia* Sweet: 18a.  
*aurantia* Pers.: 18a.  
*baueri* Lindl.: 18a.  
*herbertiana* Sweet: 17.  
*Passiflora* L.  
sect. *Decaloba* DC.: see *Passiflora*  
*adanthifolia* Ker-Gawl.: 18a.  
*adiantum* Willd.: 18a.
- Passiflora*  
*alata* Dryand.: excl.  
*altebilobata* Hemsl.: 8.  
*assamica* Chakravarty: 4.  
*aurantia* Forst. f.: 18.  
var. *aurantia*: 18a.  
var. *banksii* Bailey: 18a.  
var. *pubescens* Bailey: 18c.  
var. *samoensis* de Wilde: 18b.  
*baileyana* Domin: 18c.  
*banksii* Benth.: 18a.  
var. *brachystephanea* Domin: 18a.  
var. *typica* Domin: 18a.  
*barclayi* Mast.: 18a.  
*baueriana* Mast.: 18a.  
*biglandulosa* DC.: 17.  
*brachystephanea* Benth.: 18a.  
*burmanica* Chakravarty: 2.  
*caerulea* L.: excl.  
*caerulea* Lour.: excl.  
*calcarata* Mast.: excl.  
*caloneura* Kurz: excl.  
*celata* Cusset: 3.  
*chinensis* Hort.: excl.  
*chinensis* Sweet: excl.  
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*coccinea* Blanco: excl.  
*coccinea* Soland.: 18a.  
*cochinchinensis* Spreng.: 10b.  
subsp. *glaberrima* Cusset: 10c.  
*cupiformis* Mast.: 6.  
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*geminiflora* D. Don: 15.  
*glabra* Wendl.: 18a.  
*hainanensis* Hance: 10b.  
*hayneana* Wall.: excl.  
*henryi* Hemsl.: 9.  
*herbertiana* Ker-Gawl.: 17.  
var. *caleyana* Mast.: 17.  
*hollrungii* K. Sch.: 20.  
*horsfieldii* Bl.: 10b.  
var. *distans* Craib.: 13.  
var. *elbertiana* Hall. f.: 10b.  
*horsfieldii* King: 13.  
*jugorum* W. W. Smith: 2.  
*kwangsiensis* Li: 6.  
*kwangtungensis* Merr.: 16.  
*leschenaultii* DC.: 1.  
*ligulifolia* Mast.: 10b.  
*loureirii* G. Don.: excl.  
*mascarensis* Presl.: excl.  
*mauritanica* Thouars: excl.  
*mayana* Veitch ex Voigt: excl.

## Passiflora

- minima* Blanco : excl.  
*moluccana* Bl. : 10.  
     var. *glaberrima* de Wilde : 10c.  
     var. *moluccana* : 10a.  
     var. *teysmanniana* de Wilde : 10b.  
     var. *timorensis* Bl. : 10a.  
*muelleriana* Mast. : 19  
*murucuja* L. : excl.  
*napalensis* Wall. : 15.  
*obscura* Mast. : 4.  
*octandra* Gagn. : 11.  
     var. *attopensis* Gagn. : 11.  
     var. *cochinchinensis* Gagn. : 11.  
     var. *glaberrima* Gagn. : 10c.  
*pallida* Lour. : 10b.  
*papilio* Li : 7.  
*parviflora* Blanco : excl.  
*penangiana* G. Don : excl.  
*perakensis* Hall. f. : 13.  
*perpera* Mast. : 4.  
*pertriloba* Merr. : excl.  
*philippinensis* Elmer : 10b.  
*pinardia* Buchoz : excl.  
*polignacia* Buchoz : excl.

## Passiflora

- samoënsis* Exell. : 18b.  
*samoënsis* Yuncker : 18a.  
*saponaria* Blanco : excl.  
*seguinii* Lévl. & Vaniot : 6.  
*serrulata* Blanco : excl.  
*siamica* Craib : 11.  
*singaporeana* G. Don : excl.  
*spirei* Cusset : 3.  
*storckii* Drake : 18a.  
*suberosa* L. : excl.  
*subpeltata* Orteg. : excl.  
*sumatrana* Bl. : 5.  
*tetrandra* DC. : excl.  
*timoriana* Span. : 10a.  
*tonkinensis* de Wilde : 12.  
*verruculosa* Weinmann : 17.  
*vitiensis* Mast. : 18a.  
*walkeri(ae)* Wight : excl.  
*wangii* Hu : 11.  
*wilsonii* Hemsl. : 3.  
*yunnanensis* Franchet : 3, 6.  
*zucca* Blanco : excl.  
*Tetrapathea tetrandra* (DC.) Cheeseman : excl.